WL-TR-93-4065

COMPOSITIONAL & STRUCTURAL ANALYSIS OF AIR FORCE MATERIALS



J. H. WORKMAN

CHEMSYS INCORPORATED 574 E DAYTON YELLOW SPRINGS ROAD FAIRBORN OH 45424

APRIL 1991

FINAL REPORT FOR 02/08/88-04/30/91

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.



MATERIALS DIRECTORATE
WRIGHT LABORATORY
AIR FORCE SYSTEMS COMMAND
WRIGHT PATTERSON AFB OH 45433-7734

93-16033

Notice

When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely Government-related procurement, the United States Government incurs no responsibility or any obligation whatsoever. The fact that the government may have formulated or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication, or otherwise in any manner construed, as licensing the holder, or any other person or corporation; or as conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

This report is releasable to the National Technical Information Service (NTIS). At NTIS it will be available to the general public including foreign nations.

This technical report has been reviewed and is approved for publication.

LEE D. SMITHSON

Structural and Electronic Failure Analysis Section Materials Integrity Branch Systems Support Division Materials Directorate

William & Berner

William & Berne

WILLIAM E. BERNER, Tech Area Mgr Structural and Electronic Failure Analysis Section Materials Integrity Branch Systems Support Division Materials Directorate

THOMAS D. COOPER, /chief Systems Support Division

Materials Directorate

If your address has changed, if you wish to be removed from our mailing list, or if the addressee is no longer employed by your organization, please notify WL/MLSA, Bldg 652, 2179 Twelfth St, Ste 1, WPAFB OH 45433-7718 to help us maintain a current mailing list.

Copies of this report should not be returned unless return is required by security considerations, contractual obligations, or notice on a specific document.

APR 1991 FINAL COMPOSITIONAL & STRUCTURAL ANALYSIS

02/08/88--04/30/91

OF AIR FORCE MATERIALS

C F33615-87-C-5294

PE 62102 PR 2418 TA 04 WU 58

J. H. WORKMAN

CHEMSYS INCORPORATED 574 E DAYTON YELLOW SPRINGS ROAD FAIRBORN OH 45424

MATERIALS DIRECTORATE
WRIGHT LABORATORY
AIR FORCE SYSTEMS COMMAND
WRIGHT PATTERSON AFB OH 45433-7734

WL-TR-93-4065

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

Work performed during the period 8 February 1988 - 30 April 1991 in support of various Air Force Programs is summarized. The report is simply a tabulation of the number of samples chemically analyzed and the organizations submitting the samples for analysis. The report contains no scientific information.

CHEMICAL ANALYSIS
MATERIALS CHARACTERIZATION

7

TABLE OF CONTENTS

Introduction	 l
Analytical Support	 2

DTIC QUALITY INTERCTED 5

Acces	sion For	- + 1 - 64 mag					
NTIS	GRALI	U .					
DTIC							
Unanr							
Justification							
Ву							
Distr	ibution/						
Avai	lability	Codes					
:	Avail and	i/or					
Dist	Special	L					
A-1							

INTRODUCTION

This report was prepared by Chemsys Incorporated, Fairborn, Ohio, and is the Final Report for Air Force Contract F33615-87-C-5294. This report summarizes work performed over the period 8 February 1988 through 30 April 1991.

The individuals responsible for the bulk of the analyses performed on this contract were Mr. Donald Douglas, Mr. Michael Jubara, Mr. Thomas Kerschner, Mr. Michael Sooy, Mr. John Strobel, Dr. John M. Workman, Mr. Jeffrey H. Workman, and Dr. Chi Yu.

A portion of the support provided by this program to the Air Force required unique analytical capabilities or facilities. This support was provided by commercial and university organizations.

ANALYTICAL SUPPORT

Analyses in support of Wright Laboratories and other USAF organizations were performed during the subject contract.

The number of samples submitted for analysis during the contract period is shown in Table 1. The data are tabulated by organizations within the Materials Laboratory (MLL, MLP, MLB, MLS). Support for all other organizations is shown as Other.

F33615-87-C-5294
Samples Received for Analysis

Year	Period	MLL	MLP	MLB	MLS	Other	TOTAL
1988	February	148	5	109	94	50	406
	March	59	4	101	44	51	259
	April	37	1	27	64	52	181
	May	45	11	119	30	30	235
	June	140	1	105	23	91	360
	July	107	0	86	25	34	252
	August	41	0	88	39	27	195
	September	159	Ö	69	84	1	313
	October	53	Ö	64	95	10	222
	November	12	Ö	75	64	0	151
	December	41	18	82	46	8	195 2769
	2000202		10				133 2703
1989	January	62	0	96	26	25	209
	February	99	4	88	45	38	274
	March	73	6	84	83	24	270
	April	89	5	88	88	16	286
	May	126	2	88	140	35	391
	June	213	8	115	67	3	406
	July	113	11	54	50	25	253
	August	137	17	118	114	19	405
	September	179	1	100	52	7	339
	October	116	3	61	24	3	207
	November	52	7	49	55	17	180
	December	38	0	97	90	1.6	241 3461
1990	January	195	3	72	37	5	312
	February	141	Ō	92	90	9	332
	March	117	35	203	119	26	500
	April	115	9	89	35	10	258
	May	67	1	95	53	75	291
	June	32	4	118	30	80	264
	July	154	2	58	64	19	297
	August	104	0	88	129	26	347
	September	5	0	59	32	1	97
	October	0	0	0	2	0	2
	November	0	5	11	34	0	50
	December	35	0	64	55	45	199 2949
1991	January	66	31	74	49	9	229
	February	57	16	99	29	73	274
	March	22	16	65	92	39	234
	April	130	5	91	90	18	334 1071
	Totals	3379	231	3241	2382	1017	10250